New Business Opportunities for HERS Raters

Positioning HERS Raters as the Resource for Energy Code Compliance Verification
What We Will Cover

- ICC Background
- Evolution of Energy Codes
- Overview of Energy Code Related Services
- Employment Outlook for Code Compliance/Verification
- Career in Energy Code Compliance/Verification
- Next Steps
Background: International Code Council (Organization)

- Nonprofit corporation
- Membership of over 60,000
- Self-funded (receives no funding from federal or state government)
- Staff of more than 300 engineers, architects, administrators and support staff
- Currently maintain 15 base codes and 13 standards
- Codes updated triennially
15 ICC Codes

- Structural/Life Safety
- Plumbing, Mechanical & Fuel Gas
- Energy
- Fire Safety
- Property Maintenance
- Zoning
- Green Construction
- Swimming Pool & Spas
Background: International Code Council (Online Building Codes codes.iccsafe.org)
Background: International Code Council (Codes)

Five Tenants of the Code Development Process

- Openness
- Transparency
- Balance of Interest
- Due Process
- Consensus
Background: International Code Council (Codes)

ICC CODE DEVELOPMENT PROCESS
BY THE NUMBERS

- 3,318 Code Changes
- 1,552 Voters
- 207,176 Votes Cast
Evolution of Energy Codes and Enforcement

Key impetus for Energy Codes

- Oil shocks 1973 & 1979
- 1975 Energy Policy and Conservation Act
  - Comprehensive approach to federal energy policy
  - All states must review and consider adopting the national model energy standard
Evolution of Energy Codes and Enforcement

- Building energy consumption grew between 1980 and 2009 by nearly 48%*
- Commercial and residential buildings account for approximately 40% of total US energy consumption *

*Resources: Alliance Commission on National Energy Efficiency Policy
Development of Residential Energy Codes

- ASHRAE Standard 90-75
- 1977 Model Conservation Energy Code
- 1983 CABO Model Energy Code (MEC)
- 2000 International Residential Code
- 2018 IECC (current edition)
- 2021 IECC (scheduled for release in mid to late 2020)
Evolution of Energy Codes and Enforcement

- IECC adopted or in use in 48 states
- Adopted/adapted in Abu Dhabi, parts of the Caribbean, Mexico (voluntary)
- IECC with ASHRAE 90.1 as a compliance path for commercial
INTERNATIONAL ENERGY CONSERVATION CODE ADOPTION MAP

The IECC is in use or adopted in 48 states, the District of Columbia, Puerto Rico and the U.S. Virgin Islands.
Evolution of Energy Codes and Enforcement

States that Allow the ERI Compliance Option in the *International Energy Conservation Code*® (IECC®)

[Image: Map showing states that allow the ERI Compliance Option in the IECC (Section R 406).]
Overview of Energy Code Related Services & Publications

- Support Publications
  - Standards
  - Commentary
  - Inspector Guides
  - Study Companions
  - Significant Changes
Overview of Energy Code Related Services & Publications

Training

Energy Courses directly from ICC

- IECC Essentials
- ERI Index Compliance
- IECC Update
- Performing Residential Energy Inspections
- Performing Residential Energy Plan Reviews
- Online offerings/Webinars/Virtual Classroom

Preferred Provider Network

- Over 400 Preferred Providers
- Over 300 energy course offerings to choose from
Code Compliance: Employment Trends/Outlook (BLS)

Building and Construction Inspectors

- 2017 Median wages: $59,090
- Number of jobs: 105,000
- Job Outlook (2016-2026): 10% growth (7% for all occupations)
- Net increase of 10,500 jobs for 2016-2026 period
- Nearly half employed by government
- Highest 10 percent earn over $95,340
- Certified construction/code officials have best jobs
Annual mean wage of construction and building inspectors, by state, May 2017

Blank areas indicate data not available.

Top paying States for this occupation:

<table>
<thead>
<tr>
<th>State</th>
<th>Employment (1)</th>
<th>Employment per thousand jobs</th>
<th>Location quotient (9)</th>
<th>Hourly mean wage</th>
<th>Annual mean wage (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>10,700</td>
<td>0.64</td>
<td>0.92</td>
<td>$41.66</td>
<td>$86,660</td>
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<tr>
<td>Alaska</td>
<td>220</td>
<td>0.68</td>
<td>0.99</td>
<td>$41.60</td>
<td>$86,530</td>
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<td>District of Columbia</td>
<td>290</td>
<td>0.41</td>
<td>0.60</td>
<td>$39.92</td>
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<tr>
<td>North Dakota</td>
<td>240</td>
<td>0.57</td>
<td>0.83</td>
<td>$35.98</td>
<td>$74,840</td>
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<tr>
<td>Washington</td>
<td>3,000</td>
<td>0.94</td>
<td>1.36</td>
<td>$35.66</td>
<td>$74,180</td>
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</table>
Employment of construction and building inspectors, by state, May 2017

States with the highest employment level in this occupation:

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<td>0.92</td>
<td>$41.66</td>
<td>$86,660</td>
</tr>
<tr>
<td>Texas</td>
<td>7,890</td>
<td>0.66</td>
<td>0.96</td>
<td>$27.80</td>
<td>$57,820</td>
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<td>New York</td>
<td>7,240</td>
<td>0.79</td>
<td>1.13</td>
<td>$32.10</td>
<td>$66,770</td>
</tr>
<tr>
<td>Florida</td>
<td>6,980</td>
<td>0.83</td>
<td>1.20</td>
<td>$27.68</td>
<td>$57,570</td>
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<tr>
<td>Pennsylvania</td>
<td>5,610</td>
<td>0.97</td>
<td>1.40</td>
<td>$26.32</td>
<td>$54,750</td>
</tr>
</tbody>
</table>

Blank areas indicate data not available.
Survey Highlights

▷ 3,850 respondents covering all 50 states
▷ Typical respondent between ages of 55 and 64
▷ Salary range between $50,000 and $75,000
▷ 51% surveyed indicated they plan to leave profession within 5 to 15 years
▷ Great recession of 2008 drove many from the industry due to massive layoffs
▷ Demand for code officials is growing, supply is dwindling
▷ Movement to privatize many aspects of code enforcement
Between 26 to 35 years experience in building industry

82% percent plan to leave industry within 15 years

Of that 82%: 31% plan to leave within 5 years

Plans to Retire
Mass exodus of talent due to retirements will leave a serious shortage of Code Officials and Inspectors

Many who have left the industry due to the past recession (layoffs) are not coming back

Outsourcing certain Building Department activities is increasing (reliance on third parties)

Sustained economic recovery driving up demand for code officials, inspectors, etc.

The building industry in general is experiencing similar trends

Complexity of codes/standards is demanding more specialization
Employment Trends/Outlook

Key Takeaways

- Organic growth will not solve this impending problem
- Wages are driven by supply and demand creating upward pressure on wages
- Trend for outsourcing certain Building Department activities will increase (reliance on third parties)
- Time is not our ally
Outlook

Industry Outlook: Labor Demand

Industry Outlook: Labor Supply
Building Departments are Strapped for Time

A recent survey shows:

- 45% of IECC residential plan review is conducted in under 20 minutes
- 37% of IECC commercial plan review is completed in less than 40 minutes
Studies Show the Value of Third Parties

### THIRD-PARTY CODE INSPECTION TRADE-OFFS

<table>
<thead>
<tr>
<th>Pros</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Enhanced city energy code inspection capability, reduced</td>
</tr>
<tr>
<td>inspector workloads.</td>
</tr>
<tr>
<td>• Less permitting time, more compliance.</td>
</tr>
<tr>
<td>• Lower project costs, quicker turnarounds; accelerated local</td>
</tr>
<tr>
<td>property tax enrollment.</td>
</tr>
<tr>
<td>• Better quality control, more project oversight</td>
</tr>
<tr>
<td>(city sets inspector criteria).</td>
</tr>
<tr>
<td>• Increased market awareness of project developer.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Oversight can be time consuming; checks and balances</td>
</tr>
<tr>
<td>can deplete code officials’ resources.</td>
</tr>
<tr>
<td>• Difficulty establishing trust between city permitting office</td>
</tr>
<tr>
<td>and inspectors.</td>
</tr>
<tr>
<td>• Potential construction cost increases if hiring required</td>
</tr>
<tr>
<td>of contractors.</td>
</tr>
</tbody>
</table>
HERS Raters have an Inherent Understanding of Building Science

Insulation traps pockets of air. Stagnant air pockets create the R-value.

Stopping the movement of air from scrubbing away the stagnant air pocket now it works.
HERS Raters Understand the Life-Safety Contribution of Energy Efficiency

Works in Tandem with Model Codes

**Resiliency**
Durability ensures home is livable for decades

**Extreme Weather Protection**
Better envelopes – more lives saved

**Moisture Management**
Rot, mold, mildew

**Indoor Air Quality**
“Build tight, ventilate right”

**Fire Safety**

2019 RESNET Building Performance Conference
Third Party Firms, a Small Sample

- Colorado Code Consulting
- Lee Roberts Inspection
- US-Eco Logic
- A Closer Look Inspection Services
- Bluegill Energy
- Bureau Veritas
- DRS Third Party Energy Inspectors in Washington
## LIST OF ENERGY CODE PROVIDERS

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Energy Provider</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>A CLOSER LOOK</td>
<td>Hemsell, Jim</td>
<td>(940) 258-6688</td>
<td><a href="mailto:jim@dallasenergyinspection.com">jim@dallasenergyinspection.com</a></td>
</tr>
<tr>
<td>ACE COMPANIES</td>
<td>Delude, Cherie</td>
<td>(469) 859-6050</td>
<td><a href="mailto:aeccompanietexas@gmail.com">aeccompanietexas@gmail.com</a></td>
</tr>
<tr>
<td>ADVANCED ENERGY SOLUTIONS</td>
<td>Wallace, Larry</td>
<td>(972) 423-2500</td>
<td><a href="mailto:energytaker@live.com">energytaker@live.com</a></td>
</tr>
<tr>
<td>AFTER HOURS ENERGY INSPECTIONS</td>
<td>Crawford, Daniel</td>
<td>(214) 734-3173</td>
<td><a href="mailto:docr@arborclaypeoplinc.com">docr@arborclaypeoplinc.com</a></td>
</tr>
<tr>
<td>ALERT RESIDENTIAL INSPECTORS</td>
<td>Hackney, Jerry D</td>
<td>(617) 600-6274</td>
<td><a href="mailto:aertninspection@hotmail.com">aertninspection@hotmail.com</a></td>
</tr>
<tr>
<td>ALIAS ARCHITECTS</td>
<td>Alli, Ban</td>
<td>(214) 500-1273</td>
<td><a href="mailto:bali@dallasarch.com">bali@dallasarch.com</a></td>
</tr>
<tr>
<td>ASSURED HOME PERFORMANCE</td>
<td>Young, Marvin</td>
<td>(469) 443-3171</td>
<td><a href="mailto:marvin@assuredhp.com">marvin@assuredhp.com</a></td>
</tr>
<tr>
<td>BLINK ENERGY INSPECTIONS</td>
<td>Allen, Maverick</td>
<td>(469) 240-2399</td>
<td><a href="mailto:maverickxalen@gmail.com">maverickxalen@gmail.com</a></td>
</tr>
<tr>
<td>BLUEGILL ENERGY MANAGEMENT</td>
<td>Farmer, Clayton</td>
<td>(811) 802-1224</td>
<td><a href="mailto:clarker@bluegillenergy.com">clarker@bluegillenergy.com</a></td>
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<tr>
<td>BLUE LINE DESIGN</td>
<td>Young, Noah</td>
<td>(617) 505-0125</td>
<td><a href="mailto:noah.young@me.com">noah.young@me.com</a></td>
</tr>
<tr>
<td>BOSTROM ENERGY CHECK</td>
<td>Bostrom, David</td>
<td>(214) 585-3363</td>
<td><a href="mailto:bostrom27@yahoo.com">bostrom27@yahoo.com</a></td>
</tr>
<tr>
<td>BUILDING SOLUTIONS</td>
<td>Clark, Russell</td>
<td>(214) 221-9145</td>
<td><a href="mailto:rdark@buildingsohms.com">rdark@buildingsohms.com</a></td>
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<tr>
<td>BURGESS CONSTRUCTION CONSULTANTS, INC</td>
<td>Sandlin, Ricky</td>
<td>(214) 888-7310</td>
<td><a href="mailto:rsandlin@burgess-inc.com">rsandlin@burgess-inc.com</a></td>
</tr>
<tr>
<td>CITY SERVICE LLC</td>
<td>Webb, John</td>
<td>(972) 937-9283</td>
<td><a href="mailto:johnwebb@energysmartus.com">johnwebb@energysmartus.com</a></td>
</tr>
<tr>
<td>CODE COMPLIANCE SERVICES</td>
<td>Brown, Robert</td>
<td>(217) 718-7171</td>
<td><a href="mailto:brownrc@yahoo.com">brownrc@yahoo.com</a></td>
</tr>
<tr>
<td>CONSTRUCTION CONCEPTS, INC</td>
<td>Rodriguez, Elias</td>
<td>(214) 446-4300</td>
<td><a href="mailto:elias@buildingplansandpermits.com">elias@buildingplansandpermits.com</a></td>
</tr>
<tr>
<td>DFW CONSULTING GROUP, INC</td>
<td>McCulloch, Weldon Jr</td>
<td>(972) 827-2606</td>
<td><a href="mailto:wimcculloch@dfwog.com">wimcculloch@dfwog.com</a></td>
</tr>
<tr>
<td>DFW ENERGY CHECK</td>
<td>Schirf, Mike</td>
<td>(469) 231-1822</td>
<td><a href="mailto:schirf1@yahoo.com">schirf1@yahoo.com</a></td>
</tr>
<tr>
<td>DFW GREEN CODE</td>
<td>Devine, Mark</td>
<td>(214) 566-1431</td>
<td><a href="mailto:mark@dfwgreencode.com">mark@dfwgreencode.com</a></td>
</tr>
<tr>
<td>UWELL GREEN OF DALLAS</td>
<td>Taylor, Roger K</td>
<td>(214) 509-6582</td>
<td><a href="mailto:raytaylor@gazasis.com">raytaylor@gazasis.com</a></td>
</tr>
<tr>
<td>ENERGYWISE</td>
<td>Rue, Richard</td>
<td>(972) 345-8311</td>
<td><a href="mailto:rsmc@sbcglobal.net">rsmc@sbcglobal.net</a></td>
</tr>
<tr>
<td>ENERGY EFFICIENT MEASURES</td>
<td>Estrada, Jose</td>
<td>(214) 875-3249</td>
<td><a href="mailto:eemeasures@att.net">eemeasures@att.net</a></td>
</tr>
<tr>
<td>ENERGY INSPECTORS TEXAS</td>
<td>Mcghee, Cody</td>
<td>(469) 441-9795</td>
<td><a href="mailto:cmcghee@energyinspectors.com">cmcghee@energyinspectors.com</a></td>
</tr>
<tr>
<td>ENERGY IQ</td>
<td>Senglin, Craig</td>
<td>(214) 529-7317</td>
<td><a href="mailto:craig.senglin@energyiq-usa.com">craig.senglin@energyiq-usa.com</a></td>
</tr>
<tr>
<td>ERIC L DAVIS ENGINEERING</td>
<td>Poole, Rob</td>
<td>(972) 342-7430</td>
<td><a href="mailto:robp@eldengineering.com">robp@eldengineering.com</a></td>
</tr>
<tr>
<td>ETEG, MOCULLE &amp; ASSOC.</td>
<td>Gentry, Josh</td>
<td>(203) 681-2677</td>
<td><a href="mailto:jentry@etsystemconsulting.com">jentry@etsystemconsulting.com</a></td>
</tr>
<tr>
<td>EVANS SERVICE COMPANY, LLC</td>
<td>Evans, Rebecca</td>
<td>(972) 351-9302</td>
<td><a href="mailto:rebecca@evansservicecompany.com">rebecca@evansservicecompany.com</a></td>
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<tr>
<td>FACILITY PERFORMANCE ASSOCIATES</td>
<td>Albert, Corey</td>
<td>(972) 386-0144</td>
<td><a href="mailto:gkettler@att.net">gkettler@att.net</a></td>
</tr>
<tr>
<td>FOX ENERGY SPECIALISTS</td>
<td>Lyons, Donnie</td>
<td>(817) 546-0160</td>
<td><a href="mailto:dlyons@foxenergyspecialists.com">dlyons@foxenergyspecialists.com</a></td>
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</table>
ICC/RESNET: A Natural Synergy

- Taps knowledge base of RESNET and its members to improve level of code compliance
- Recognizes the shared mission to promote energy efficiency through education
- RESNET Members can serve as a resource in raising efficiency of building performance
- Helps meet the challenges of demographic shift of code related workforce
Expanding Opportunities for RESNET HERS Raters

Energy Code Compliance Verification
- Opportunity to expand into areas with higher demand
- Broaden Portfolio of service offerings

ERI Path
(R406 & RESNET/ICC 301)

Performance Path
(R405, R401-R404 “Mandatory”)

Prescriptive Path
(R401-R404)

$ $ $
Expanding Opportunities for RESNET HERS Raters

- ICC/RESNET Perf. Compliance Report
- ICC/RESNET Certificate: Performance Path
- ICC/RESNET Certification
- Residential Energy Inspect./Plans Exam. 79
- ICC IECC Training

2019 RESNET Building Performance Conference
Importance of ICC Certification

- Certification as Residential Energy Inspector increases marketability to jurisdictions/building industry
- ICC Certification has portability
- Code Officials are struggling to keep up and often rely on third parties for help
- ICC is a trusted brand with jurisdictions throughout the US and around the globe
- Certification reflects code competency
- Third Party Certified individual has greater credibility with Code Official
Importance of ICC Certification

Energy Certificants by the Numbers

- 1,600 ICC Commercial Energy Inspectors
- 1,040 ICC Commercial Energy Plans Examiners
- 2,775 Residential Energy Inspector/Plans Examiner
Energy Certification Program

- Available through Internet (PRONTO) or computer based testing center (CBT)
- Over 400 testing centers in US (PearsonVUE)
- Certification renewal every 3 years
- Most examinations are around $200
Becoming ICC Certified as a Residential Energy Inspector

- Pass Residential Energy Inspector/Plans Examiner test
- 50 multiple-choice questions
- Open book, 2-hour exam
- Once passed, it is good for three years
- Renewed every three years by obtaining CEUs
Next Steps

Take advantage of the ICC/RESNET Special Offer
Next Steps

Bundle includes:

- 1 year ICC Professional Membership
- Free code opinions on all ICC Codes
- Member discounts
- Complimentary IECC
- Complimentary ANSI/RESNET/ICC 301, ANSI/RESNET/ICC 380
- Voucher to take Certification exam
- Online subscription to Building Safety Journal
- Savings of more than $100.00
2019 RESNET Building Performance Conference

Next Frontier

- Residential Inspection
- Water Efficiency Ratings

Water

Energy

Water Flow Diagram
QUESTIONS

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